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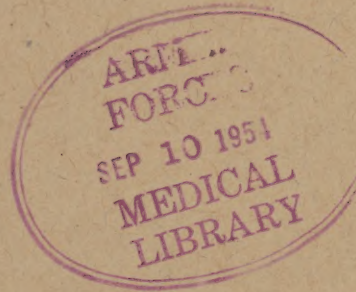
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MEDICAL FACULTY OF THE FRIEDRICH-SCHILLER-UNIVERSITY JENA

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MEDICAL FACULTY

of the

FRIEDRICH-SCHILLER-UNIVERSITY

JENA, THÜRINGEN

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I. INTRODUCTION

The university was founded in 1558. The earliest record of medical instruction was in 1710. The Medical School and Faculty is comparatively small with a total enrollment of 450 students for any one year. Matriculation in the larger centers of population such as Berlin, Hamburg, Bonn or Strassbourg varies from 1500 to 3500 students. Although over half of the medical students during the years from 1940 to 1943 inclusive were drafted into the army as ordinary soldiers, the enrollment stayed about the same, as three instead of two sessions a year were held so the course could be shortened to 3 years. In 1944 the Army initiated the policy of allowing soldiers to return to complete their medical education and two sessions a year became the rule.

With two exceptions the buildings are very old and the equipment was said to have been sufficiently modern to fulfill all purposes until about ten years ago. The professors who were interviewed stated without exception that very few funds had been received from the German Government during the past ten years as the university has always been in disfavor with the Nazis. No evidence of any research work being done to further the war effort was found by this investigator.

The medical school buildings as a group were about 25% destroyed. The buildings occupied by the Ear, Nose and Throat Departments, the Anatomical Institute, the Physiological Department and the Chemical Institute were totally destroyed with all records and apparatus by incendiary bombs in December 1943. The remaining buildings had doors and windows blown out but suffered no major damage. The buildings completely destroyed were not situated on the university grounds. They were scattered in various parts of the city in the vicinity of the railroad station or near a large factory. The departments housed in these buildings have existed in name only since the bombing as no attempt had been made to reconstruct them.

The outstanding and nationally known men on this faculty were the Dean, Prof. Wolfgang H. Veil, head of the department of Internal Medicine and Neurology; Prof. Hans Schlossberger, Director of the Institute of Hygiene and Bacteriology. The two men known internationally were Prof. von Mikulicz-Radecky, head of the Department of Gynecology and Obstetrics and Prof. J. Zange, head of the Ear, Nose and Throat Department.

Several of the teachers, as for example, the well known pathologist Ludwig Heilmeyer, was forced to flee the country because he was part Jewish. Others were removed by the

Medical Faculty because they had become too ardent Nazis. Research work had therefore been greatly reduced in many departments even before the outbreak of war. Lack of supplies of all kinds and the psychological feeling of impending defeat of the German Army also reduced the work done in the various laboratories and clinics. During 1942 and 1943 all male Medical students were drafted into the Army and about 60% of the laboratory assistants were taken by the military services. Inability to secure experimental animals and the fodder they needed also contributed to a slowdown in research productivity. All the professors had attained their chairs before Hitler attained power, and this investigator was told that there was a constant struggle going on between the Nazis in Berlin and the conservative faculty members at Jena.

This university had always been held in great esteem because of its association with Goethe and Schiller. Public opinion was so strong that the Nazis were afraid to discharge the older professors and appoint ardent Nazis in their places, a procedure that took place at Leipzig in many instances.

II. ACTIVITIES OF THE VARIOUS DEPARTMENTS

1. The Director of the Department of Internal Medicine and Neurology was Prof. Dr. W. H. Veil, aged 60. He spoke no English but was most cooperative. He is well known for his work on streptococci as causal agents in arthritis and for a new medical theory that many somatic diseases are the result of old brain injuries and that disease cannot occur without previous brain stem injury. He has written extensively, in collaboration with his Oberarzt, Prof. Otto Sturm, on this theory but it has not been accepted by the medical profession. A monograph of 733 pages entitled "Der Rheumatismus und die Streptomykotische Symbiose" was published in 1939 at Stuttgart. A second monograph of 444 pages entitled "Die Pathologie des Stammhirns und ihre vegetativen klinischen Bilder als Erkenntnis der Grundlage der Unfallbegutachtung innerer Krankheiten" was published in 1942 in Jena and is now in its second edition. All his writings are couched in a flowery and philosophical vein, sometimes with little regard for accepted facts and present-day theories in medicine. A brief summary of two papers and two monographs relative to the above points follows:

Veil, W.H.: Grave's Disease; Progress in its study and evaluation of its relationship to the Heart, Gustav Fischer, Jena, Germany, 1944.

The author states that Grave's Disease as described in 1840 with the classical symptoms of exophthalmus, swelling

of the thyroid gland and tachycardia is not actually a disease of the thyroid gland. The diseased gland is not the cause, but the result of the disease.

The common combination of Grave's Disease with diabetes melitus is not casual, but certain connections must exist. Central disturbances of the vagus produce specific electrocardiograms, which have not been sufficiently explained as to their genesis.

The thyroid gland symptom is produced by the action of thyreotropic hormone on the pituitary brain system. The standpoint that Grave's Disease is either a hereditary or constitutional disease is just as unwarranted as it is for any other disease, whether it be ulcer of the stomach, mitral disease or rheumatism.

Veil, W.H.: The Pathology of the Brainstem, Deut. Med. Wochenschrift. 7: 83, 1944.

Processes in the brainstem represented so far the basic element of our physiologic thinking about respiration, circulation, metabolism, the vegetative nervous system and the hormonal equilibrium. In modern pathology it played only a minor role. The author thinks that symptoms of disease are not reactions of the diseased organ, but of the visceral total organism, represented by the brainstem.

Veil, W.H.: The Pathology of the Brainstem, Forschungen und Fortschritte 25: 207, Sept. 1944.

Pathology of the brainstem "means the recognition that this particular part of the brain plays a more important role in the origin of disease than all other pathology producing processes" That would lead to the conclusion that not the bacteria and toxins, and not the purely physical damages that act upon our organism, make us sick, and that not only the changes in the cells and organs represent the disease (cellular pathology and organic pathology) but the pathological changes in the brainstem.

Disease as an entity is the change or the loss of the physiological central guidance of the organism by the brainstem, like loss of heat regulation (fever), of the carbohydrate assimilation (diabetes), etc.

Veil, W.H.: Focal Infection and Its Significance in Relation to Human Pathology. Gustav Fischer, Jena, Germany - 1942.

The author discusses the different locations of focal infection, teeth, tonsils, maxillary and frontal sinuses, the cribiform cells, gall bladder and appendix. He then discusses the more important points of focal infection, which Hunter originally called "Oral Sepsis". The bacterial basis of the focal infection is the same as that of the old sepsis, namely, streptococci and staphylococci. Just as the tubercular focus is considered as the primary affection of the tuberculosis, the focal infection is considered the primary affection of the staphylo or streptomycosis. The author then cites a series of cases, in which existing pathological conditions disappeared after removal of the focus. The article follows in general the doctrines of Rosenow in America.

Additional publications from the Medical Department in recent years are listed below:

1. Veil, W.H.: "Der Rheumatismus und die Streptomycotische Symbiose" - Stuttgart, 1939 (733 pages)
2. Veil, W.H.: "Die Pathologie des Stammhirns und ihre vegetativen klinischen Bilder als Erkenntnis der Grundlage der Unfallbegutachtung innerer Krankheiten" Gustav Fischer, Jena, 1942. Second edition, 1945, of 1444 pages now being printed.
3. VEIL, W.H.: "Die Bedeutung des Herdinfektes bei rheumatischen Krankheiten" Ztschr. f. Ärztliche Fortbildung 6: 34, 1940.
4. Veil, W.H.: "Adipositas" Fragekasten der Münchener Med. Wchnschr. 12/41, 1943.
5. Veil, W.H.: "Simmondsche Kachexie" Fragekasten der Münchener Med. Wchnschr. 4/54, 1942.
6. Sturm, O.: "Grundbegriffe der Inneren Medizin für Studierende der Medizin und Zahnheilkunde", Gustav Fischer, Jena 1941 (671 pages).
7. Sturm, O.: "Blutdrucksteigerung als Gehirnfunktion in Nierenkrankheiten" G. Fischer, Jena, 1944 (135 pages).
8. Sturm, O.: "Die Klinische Pathologie der Lunge in Beziehung zum Vegetativen Nervensystem" G. Fischer, Jena, 1944 (212 pages).

9. Sturm, O.: "Die Stufensphygmographische Analyse der Kreislaufwirkung des Veritols"
Naunyn-Schmiedeberg's Archiv für experimentelle Pathologie und Pharmakologie, 1939.
10. Sturm, O.: "Erregungszustände im sympathischen Nervensystem in Beziehung zu vasomotorischen Kreislaufstörungen bei Beinamputierten"
Deutsche Medizinische Wochenschrift, 1940.
11. Sturm, O.: "Der Stoffwechsel"
Lehrbuch der speziellen pathologischen Physiologie, Jena, 1940.
12. Sturm, O.: "Beiträge zur Kenntnis des Schwefelstoffwechsels" zusammen mit A. Kautzsch.
I. Mitteilung. Zeitschrift für klinische Medizin, 1940.
13. Sturm, O.: "Beiträge zur Kenntnis des Schwefelstoffwechsels" zusammen mit A. Rothmann.
II. Mitteilung. Zeitschrift für klinische Medizin, 1940.
14. Sturm, O.: "Der regionale Antagonismus der Hautschrift und seine klinische Bedeutung"
Zeitschrift für klinische Medizin, 1940.
15. Sturm, O.: "Nierensteinbildung und Hirnschädigung"
Münchener Medizinische Wochenschrift, 1941.
16. Sturm, O.: "Ein Beitrag zur Kenntnis des elektrischen Unfalls (Wirbelbruch, cardialer Schenkelblock, striäre Hypertonie nach Starkstromverletzung)"
Klinische Wochenschrift, 1941.
17. Sturm, O.: "Cerebrale Anaphylaxie und Hirnschädigung" Klinische Wochenschrift, 1941.
18. Sturm, O.: "Die extraorale Herdinfection", zusammen mit Karl-Heinz Haslinger.
Zeitschrift für klinische Medizin, 1942
19. Sturm, O.: "Die Kältewirkung auf die Haut in Beziehung zum regionalen Antagonismus der Hautschrift", zusammen mit G. Troschke.
Zeitschrift für klinische Medizin, 1942.

20. Sturm, O.: "Über die Segmentpneumonie"
Klinische Wochenschrift, 1943.

21. Sturm, O.: "Diencephalose und diencephale Reaktion" Klinische Wochenschrift, 1944.

2. The Skin and Venereal Disease Department was found in a large undamaged building of 5 stories located on the outskirts of the town. It had a bed capacity of 290 at this time and had allotted 40 of its beds and several treatment rooms to the Ear, Nose and Throat Department. The department is under the direction of Prof. Dr. J. Hämel, aged 47. It was stated that no research work had been done in dermatology or syphilis during the last five years, since the Nazis felt that research in this field could contribute but very little to the war effort. The Nazi authorities were satisfied with the present method of treating syphilis with bismuth and arsenic. Hämel had not heard of using penicillin for either gonorrhea or syphilis. Long series of cases of gonorrhea were treated with sulfonamides but the records have never been published. The treatment of choice was 4 days; $7\frac{1}{2}$ grams of sulfa were given the first day; 6 grams on the second day; 5 grams on the third day and 4 grams on the fourth day. If the disease was not cured after a week's interval, a second four day course was begun; half the sulfa was given by the I.V. route and half per os. If infection persisted, or if complications arose, the patient was given fever treatment, induced by either malaria or typhoid vaccine injections. Very few failures and only rare cases resistant to sulfa were encountered when using this method of treatment in which large amounts of a relatively toxic drug were used. Toxic reactions from such large doses were said to occur very rarely, and consisted of mild forms of nephritis and occasional exfoliative skin eruptions. No definite information could be obtained about sensitization of the patient to sulfa. There appeared to be less danger of sensitization with large doses than with small ones.

Routine treatment of syphilis in this clinic was as follows:

- A. Fresh syphilis - dark field positive and Wassermann negative.
- B
 - 1. Neosalvarsan - 1 course of 12 injections (0.6 gm each) in first 6 weeks.
 - 2. Bismuth - 1 course of 12 injections in first 6 weeks.
 - 3. Rest period of 6 weeks, then courses of As and Bis with alternate periods of rest until Wassermann and spinal fluid tests were negative.

- B. Fresh syphilis - darkfield positive and Wassermann positive.

Same routine as in "A" but lasting 18 to 24 months.

- C. Latent syphilis.

Alternating courses of As and Bis for 24 months or until Wassermann and spinal fluid tests are negative.

- D. Paresis.

Arsenic given by I.V. injection and bismuth by I.M. injection alternating with periods of rest following fever from malaria which was induced through the bite of an infected mosquito. Direct infection is preferred to the injection of infected blood because the reaction is more uniform.

- E. Period of Observation. .

Wassermann tests are made every 3 months during the first year - spinal fluid at end of this year.

During 2nd year - Wassermann tests at end of 6th and 12th months.

A positive report at any time calls for the renewal of 2 or more courses of As. and Bis.

- F. Criteria for permission to have a marriage certificate issued by the German authorities.

Freedom from signs of activity as indicated by negative Wassermann and spinal fluid tests for 2 years following cessation of treatment.

The following miscellaneous facts were also obtained about skin diseases in general.

1. Acne vulgaris - Dietary treatment and local applications of lotions and ointments with no routine roentgen radiations. Selected cases with isolated and exaggerated nodular lesions are treated with light, filtered x-rays.

2. Psoriasis - No new methods of treatment. Local applications and foreign protein shock treatment is generally used. A definite statement that the fat-free diet of Burger and Grütz was of no value was volunteered by Dr. Hamel.
3. Pemphigus - Chiefly blood transfusions. Germanin not used because of dangerous toxicity.
4. Mycosis Fungoides - Believed to be parasitic in origin. As used internally but practically no roentgen therapy used.
5. Lupus vulgaris - Electro surgery combined with injections of gold and copper.
6. Rodent ulcers of the skin were treated by the Coutard method of superficial roentgen radiation. Other epitheliomas were destroyed by electrocoagulation after prophylactic unfiltered Roentgen radiation. Occasionally radium needles were inserted radially in fungating lesions of the cylindroma type. No radium or Roentgen radiation was used in epithelioma of the ear - the growth was excised and the base destroyed by electrocoagulation.

A summarization of the most important papers published from this department now follows:

Eymess, G.: "The Spread of Venereal Diseases in Thüringen in the Years 1931 to 1937."
Carl Beck, Eisfeld, 1940.

The present work shows that Thüringen equals the average of the German Reich in regard to the spread of Venereal disease. It is especially remarkable that Thüringen reaches those values in spite of its predominantly industrial population; this may justifiably be considered as a success of the Gesellschaft zur Bekämpfung der Geschlechtskrankheiten in Thüringen (Society for the Control of Venereal Disease in Thüringen).

The incidence is nevertheless still very high and the amount of money to be acquired and to be paid for the treatment of the patients, former invalidity -- for example in the case of patients with old cases of syphilis -- and disability to work, caused by venereal disease, is still extraordinarily large. To obtain in the future a further decrease in venereal disease it seems absolutely necessary that legal measures be taken, for the voluntary means available for an effective control of the diseases are exhausted. The importance of the detection and treatment of all sources of infec-

tion is shown in the quoted example of the syphilitic waitress of the rural district of Arnstadt. It must thus be demanded that the infectious venereal diseases, just as infectious tuberculosis, be included in the law on epidemics so that it is compulsory to report these diseases. Only in this manner it seems possible to advance another step in the control of the venereal diseases.

Hamel, J.: "Progress in the Diagnosis of Gonorrhea"
Arch. f. Derm. u. Syphilis 184: 307, 1943.

The efforts to infect experimental animals with gonococci have not been unequivocally successful in spite of extensive and repeated experiments. Thus the physician still has to rely upon those methods of diagnosis which were known at the time of discovery of the gonococcus or shortly afterwards. With thorough examination of the microscopic preparations and unequivocal bacteriological technique in the preparation of a gonococcus culture one is as certain to discover a gonococcus infection or recidivation after therapy as is at all possible with biological methods. Serological reactions are an accessory aid which may be very useful in correspondingly critical evaluation. The errors which may occur then lie within the boundaries drawn for human knowledge.

Link, Th., and Schmidt, J.: "The Sulfathiazol Treatment of Gonorrhea." Münch. med. Wschr., 37: 794, 1942.

As was shown in the author's own investigations the one-day large initial dose treatment with 5 gm sulfathiazol in gonorrhea of women also yields very favorable results. Recidivations occurred in 6 out of 175 women, i.e., 3% of the cases.

Hamel, J.: "The Treatment of Skin Tuberculosis with Gold and Copper" (Solganal B and Ebesal.)

1. The treatment of skin tuberculosis with gold (Solganal B oleosum) in combination with the patient's own blood produces in most cases (especially in tuberculosis luposa) quite considerable improvement. In a large number of patients, however, recidivations occurred. Thus this method is recommended as initial treatment, which then would have to be followed by local measures for the elimination of the persisting remnants of the skin disease.

2. Experiences made until now with the use of copper (Ebesal) have shown that its effect approaches that of

gold, but does nevertheless not quite reach it. After temporary improvement recividations also occurred here.

Helmke, R.: "The Lowering or the Raising of the Sensitivity of Human Skin with Simultaneous Red and Infra-red Radiation, Using the Erythema reaction as a Standard."
Strahlentherapie 75: 141, 1944.

The influence of infra-red, resp. red light radiation upon the erythema boundary of the ultraviolet light erythema was investigated in 400 persons. The sources of ultraviolet light chosen for this purpose were the Jesionek Hall lamp and the quartz-cadmium lamp. The infra-red light sources were the Sollux lamp and the electric heater (reflector type), the source for red light the Novolux lamp. In by far the majority of persons examined there appeared a lowering of the erythema boundary by infra-red radiation and a raising of the erythema boundary by red light. In a small number of persons this behavior was reversed. At the same time, it was determined that lowering or raising of the erythema boundary does not run parallel to the intensity of the degree of reddening.

Helmke, R.: "The Effect of Ultraviolet, Roentgen, and Grenz Rays upon the Skin of Swine."
Strahlentherapie 71: 309, 1942.

The effect of ultraviolet, roentgen, and grenz rays upon the skin of swine was investigated. This is the first time that such tests were performed with swine. The reactions of 5 radiations of various wavelengths were compared on the skin of the same individual. The degree of reddening and tanning caused by the radiation was determined by measurement of the decrease of reflection in the green and in the red.

The effect of the unfiltered ultraviolet radiation of the Kromayer mercury quartz lamp did not differ much from that filtered by means of Schott glass WG 7. Radiation upon the skin of the swine with outer range UV and UV B of the Kromayer mercury quartz lamp during a period of 1.8 seconds to 197 seconds showed that UV B was primarily active in producing the effect. Radiation upon the porcine skin with UV A caused immediate pigmentation after radiation; however, there was simultaneous erythema. Tests with UV A were performed on swine 8 to 10 weeks old and older swine (up to 7 months.).

The period of latency of ultraviolet radiation in swine was equal to that in man. In the case of roentgen rays, larger dosages were applied than in man. In radiation with

higher dosage the time of latency was shorter than with lower dosage. It lasted from 8 to 16 days. The period of latency of the boundary rays was equally large in all dosages; it amounted to 10 to 17 days. The beginning of pigmentation appeared in ultraviolet, roentgen, and grenz rays on the same day on which the erythema appeared.

The erythema boundary with ultraviolet, grenz, and roentgen rays was higher in swine than in man.

The course of the erythema was in all five radiations generally parallel to that of pigmentation. The reaction upon radiation with ultraviolet above 320 nm had the shortest duration. Reactions upon radiation with unfiltered Kromayer lamp light and Kromayer light filtered by means of a Schott filter WG 7 showed a similar course. There were found curves with one summit, with two summits, and one mixed type. Reactions upon roentgen and grenz rays showed similar curves. There were slight indications of the type of course of roentgen reaction upon the skin in several waves, as observed by Miescher. Erythema and pigmentation by ultraviolet light were of equal duration; for certain external reasons the grenz and roentgen ray reaction could not be followed to the end.

Bases for the gradation curves were the summit points of the course of the curves of the individual doses. The steepest gradation was found with radiation by means of the unfiltered Kromayer mercury quartz lamp. This was followed closely by that from the Kromayer mercury quartz lamp filtered by means of the Schott filter WG 7. Radiations with long-wave ultraviolet, with roentgen and with grenz rays showed a shallow gradation. The gradation of all five radiations was flatter than in man.

The effect of the ultraviolet, roentgen and grenz rays upon the skin of the swine agrees in essence with that upon the skin of man, but in detail there are considerable differences, especially in regard to the height of the erythema boundary, the time relation between the appearance of erythema and pigmentation, the duration of both, further the skin reaction after radiation with ultraviolet above 320 nm and finally in regard to gradation. The results are suited to serve as reference values for further research in experimental animal radiology.

3. Of all the departments at Jena, the Ear, Nose and Throat Department is the best known throughout Germany. Its Director, Prof. Dr. Johannes Zange, is a dynamic young

man, aged 45, who spoke no English but who was most cooperative. He is editor of the leading ENT Journal of Germany, the "Archiv für Ohren, Nasen und Kehlkopfheilkunde", and had a large and well trained staff, headed by his Oberarzt Prof. Fritz Zöllner, who is also well known in Germany for his scientific contributions.

The department had been housed in a large 5 story modern building, with a capacity of 250 beds and ample treatment and out-patient clinic rooms. For a number of years Prof. Zange had been interested in the early recognition and treatment of cancer of the larynx. His studies tried to find the ideal treatment and whether X-ray or radium radiation alone or combined with surgery or electro-decassication and electro-coagulation was the method of choice. He was equipped to give his own high voltage radiation and radium treatments. (Observation over a period of 10 years of cases treated by the combined method of radiation and electrosurgery showed between 38 and 40% of cures.) His staff has been interested in a wide variety of ear, nose and throat conditions as indicated by the attached reprints.

The building was completely gutted by fire from incendiary bombs in December, 1943. Apparatus and records to the amount of 90% were destroyed. All but routine work has stopped since then. Reconstruction was begun but the building was destroyed by bombs again in March 1944 and January 1945. The department has moved into the dermatological building which was in another part of town and not damaged. The present capacity is 40 beds and the staff consists of the Oberarzt and one interne. There was less atmosphere of pessimism in this department despite its almost complete destruction than was found in other departments comparatively untouched but under the direction of older and more conservative professors.

Zange, J.: "Tonsillectomy in Heart Disease"
Deut.Med.Wchnschr. 21: 293, 1944.

This is a follow-up study of results of removal of the tonsils for heart disease. Of the 580 original cases only 366 could be completely reported upon. The following interesting conclusions were reached after 10 years observation:

1. In 87 cases of rheumatic endocarditis 20% were cured; 33% improved; 40% unchanged and 7% (3 deaths) made worse. Tonsillectomy should never be done at the height of acute rheumatic endocarditis or during decompensation.

Tonsillectomy is contra-indicated in chronic nephritis following rheumatic fever as the tendency to hemorrhage is increased and the endocarditis is very often made worse.

2. In 72 cases of myocarditis of different types 24% were cured; 43% improved; 19% unchanged and 14% made worse by tonsillectomy.

3. In 11 cases of coronary disease none were cured, but 7 were improved and one was made worse.

4. In 8 cases of pericarditis 50% were healed; 25% improved, and 12½% made worse.

5. In 73 cases of heart disease with the etiology unexplained 56% were cured; 17% improved; 15% unchanged and 12% made worse.

6. In 11 cases diagnosed heart neurosis by trained internists 36% were cured; 46% improved and none made worse.

7. In severe thyrotoxicosis tonsillectomy is done with hesitancy.

The question whether the same results can be obtained with local treatment and roentgen radiation of the tonsils as by tonsillectomy was answered in the negative after this ten year study for the observers feel that a chronic tonsillitis is rarely if ever completely healed - tonsillectomy is the only answer in serious cases. These views were proven by histological studies of apparently healthy tonsils.

Muller, E.: "Otoneurological Studies in Gunshot Wounds of the Head."

Arch. f. Ohren, Nasen, u. Kehlkopfheilkunde,
1943, 153: 172 - 186.

The result of the above investigations in regard to gunshot injuries of the cranium, primarily those with immediate injury of the bone and of the brain, in part also those with only external tangential shots, is briefly the following:

1. Disturbances of the central cochlear and vestibular system are frequent in shotwounds of the head, even without injury of the auditory meatus. Under ordinary conditions they are often not noticed by the wounded, but they frequently are diagnostically most valuable for the proof for an organic cerebral injury.

2. Unilateral auditory disturbances are usually found on the side of the injury. However, a more pronounced lowering of hearing was also ascertained in some cases on the uninjured side of the head.

3. The vestibular disturbances consist mostly of a finely oscillating nystagmus, spontaneous or latent, or merely a tendency to nystagmus, more frequently on the side of the injury than on the opposite side. The caloric excitability of both labyrinths is usually normal. The tendency to nystagmus frequently becomes visible only by a so-called "position nystagmus", which may be released in one or the other horizontal position, but which also may be frequently observed only under the Leuchtbrille ("illuminating spectacles")

4. In cases with position nystagmus with determined direction, i.e. nystagmus with movements in only one direction, it was frequently possible to determine a time difference in the rotatory nystagmus or in the caloric nystagmus between the two sides, corresponding to its direction.

5. In regard to the location of the cerebral injury, vestibular disturbances became more frequent the closer the injured cerebral region was to the occiput. The same or a similar condition could not be determined in cochlear disturbances.

6. The symptom of central "dis-inhibition" (Unterberger), which was formerly designated as "over-excitability" in the rotation test, was found more frequently in injuries of the cerebellum than in injuries of the cerebrum; it was never found in cases without direct cerebral injury. Other forms of vestibular disturbances which might perhaps be characteristic for a certain cerebral region were not observed.

7. It was found, as an important factor for neuro-diagnosis as a whole, that corresponding octavus disturbances are to be found frequently even when any other neurological symptoms are lacking; they were found in approximately one third of the author's cases.

Zöllner, F.: "Complications Following Roentgen Treatment of Carcinoma of the Larynx by Tumor Perichondritis and Radiation Perichondritis; the Question of Radiation Injuries of Osseous Tissues".
Strahlentherapie, 1941, 70: 193 - 242.

After it was demonstrated in a previous article that the perichondritic reactions which occur sometimes during and after long periods of radiation treatments of laryngeal tumors, can be traced back to a previously existing tumor perichondritis closer details on the origin of this condition are furnished here. Above all it is shown that it originates primarily in the tumor itself and spreads out, and that tracheotomy generally merely favors its further development.

Tumor and inflammation influence each other mutually. The inflammation is ameliorated in its course, in spite of extensive osteomyelitis the clinical symptoms are often only slight. The growth of the tumor, however, is furthered by the inflammation, and also malignant cell groups may easily be disseminated.

If tumor radiation at the same time involves a considerable concomitant inflammation, this will lead to violent reactions which are characterized at first by early edema. This may immediately change into grave perichondritis, but rapid necrosis of the tissues under the influence of the radiation may alleviate the focus of infection and thus cause a temporary improvement, from which then later there develops a retarded perichondritic reaction by sequestral inflammation and recidivation of the tumor.

In grave inflammation with necrosis, originating from tumor perichondritis because of radiation, one finds no indications of cell injury in the tissues, as it is not based on an injury of healthy tissue. In contrast to this one may observe in case of overdosage of long-period radiations the same type of tissue injuries as otherwise after short-period radiations. As specific for the radiation injuries of osseous tissues one may add to the known characteristics of roentgen injuries also the disappearance of the osteoblasts and of the osteoclasts as new factors. Necrotic inflammation in itself is not characteristic for injury by radiation.

In selecting patients for radiation and operation the proof for hidden foci of inflammation in the structure of the larynx is of importance. Patients with occult perichondritis must be excluded from radiation treatment.

Zöllner, F.: "Peroral removal of shrapnel from the base of the skull."
Deutsche med. Wschr. 1944, Nr. 13/14:
181-185.

Shell fragments which lie close to the center of the base of the skull must, for the avoidance of injuries to the cerebral nerves and blood vessels, if at all possible, be removed through the nose or its accessory sinuses or from the oral or nasal larynx, and not from the outside. The large cervical blood vessels must, if there is danger of hemorrhage, be safeguarded at typical points. Two examples illustrate the possibilities of the peroral procedure; among these especially the incision through the bed of the palatine tonsil into the upper parapharyngeal tissue to the base of the styloid process may be but little known, but it is very suitable for this type of operation.

Wullstein, H.: "The Roentgenogram of the Larynx in the Infant and Small Child; Its Diagnostic Significance and Advantages."
Arch. f. Ohren, Nasen u. Kehlkopfheilkunde, 1941, 150: 328-336.

The roentgenogram of the larynx and pharynx in the infant and small child has proved to be a very valuable aid to the author. Naturally it is used less often and in somewhat different conditions in the child than in the adult. Primarily there are foreign bodies, but also various types of hindrances to respiration which were indications for roentgenograms, in these children. One example quoted by the author was a case of severe burns of the throat in a 3½-year old child, where the roentgenogram gave indication that tracheotomy should be omitted, whereas clinically it appeared indicated. The use of the roentgenogram in laryngeal stenosis due to diphtheria for indication of tracheotomy needs additional study.

The positions used for these examinations of the larynx are the simple antero-posterior and the lateral, preferably with soft radiation. Special measures are not required, as the soft parts and bones are still in early stages of development.

In doubtful cases pictures are made in two directions for the localization of the foreign body. It is important for the examiner to be acquainted with the actual proportions in a small child and all other possible sources of error.

Wullstein, H.: "Development of Post-operative, Spontaneous Sinus Ruptures."
Arch. f. Ohren, Nasen u. Kehlkopfheilkunde, 1941, 150: 339-343.

Spontaneous, post-operative sinus rupture and hemorrhage

may have two totally different manners of origin.

1. An occult traumatic origin, generally caused by very fine bone fragments which have penetrated the sinus wall which in itself is healthy. Accordingly treatment in these cases is purely local.

2. The true spontaneous rupture on the other hand is caused by the lack of any reactive strength of the sinus, indicated on the exterior side by a lack of granulation development, on the internal side by the lack of thrombokinesis. Cause for this reactive weakness of the sinus wall is to be found frequently in a greatly debilitating general disease, frequently scarlatina, in the author's case, in a secondary erysipelas. The rupture then frequently announces its presence previously by increasing necrosis of the wall. In this case local measures are of practically no use; the importance lies in raising general resistance, possibly already from a prophylactic point of view, and thus to stimulate intensive granulation formation in the sinus.

If the hemorrhage has occurred, it is not absolutely necessary to neutralize the sinus completely, because it would cause new intensive hemorrhages. If the general condition is improved sufficiently, slight, uninterrupted tamponade of sufficient duration may still render granulation of the perforation area possible. If in the course of this tamponade, however, there occur indications of a general infection, this method must be interrupted and the sinus must be closed out.

Zöllner, F.: "Method for Locating and Emptying Deep Subdural Abscesses at the Base of the Skull".
Zschr. f. Hals, Nasen u. Ohrenheilk.,
49: 409-415, 1943.

Basal, subarachnoid pus foci may be suction-treated in a conservative manner through a small incision of the dura of the cerebellum between labyrinth and sigmoid sinus by means of suitably curved, blunt tubes. From this small opening in the dura one may push the small tube in various directions into the subdural space and thus reach all regions from the clivus to the occipital foramen. In this manner the author succeeded in saving 2 patients, in whom otogenic meningitis after operative elimination of the primary focus had improved only temporarily in spite of sulfonamide treatment, but then had formed a cistern block as the result of the development of a sack-like purulence of the posterior fossa.

Zöllner, F.: "Variations in Auditory Acuity Due to Vascular Changes (Improvement in Auditory Acuity by Means of Hemostasis.)"
Arch. f. Ohren, Nasen u. Kehlkopfheilkunde,
151: 94, 1942.

Variations in auditory acuity due to vascular changes (Vaskuläres Wechselgehör) designates a temporary improvement in auditory acuity caused by means of hemostasis of a vein, which may be recognized by the fact that a tuning fork, whose sound has already become inaudible to the ear in question, becomes audible again to the patient because of pressure exerted upon the cervical veins or the abdominal veins. This phenomenon can be observed in certain forms of difficulty in hearing due to abnormal conditions of the inner ear.

Zöllner, F.: "Deviation of the Larynx as a Sign of Narrowing of the Upper Mediastinum."
Arch. f. Ohren, Nasen u. Kehlkopfheilkunde
152: 362, 1943.

In processes which narrow the space of the hypopharynx and the upper portion of the esophagus, the larynx and the trachea are pressed away from the cervical spinal column in an anterior direction, toward the sternum; this can be determined clinically by obliterating the fossa juglaris by means of palpation; the palpating finger can no longer penetrate between the upper margin of the sternum and the trachea in order to press the trachea toward the vertebral column.

Wullstein, H.: "Cancerous Lymph Node Metastases in the Neck in Their Relation to the Large Cervical Vessels."
Arch. f. Ohren, Nasen u. Kehlkopfheilk.
1941, 150: 268-295.

The purpose of the present study was to gather information on the manner of spreading of cancer in the region of the wall of the carotid artery and the jugular vein, on basis of histological pictures of resected cervical vessels which had been permeated with tumor metastases; practical conclusions for treatment were to be drawn from this information.

Cancer penetrates into and through the wall of the vein (1) by continuous growth; (2) by means of the vasa vasorum; and (3) by way of the secondary infection which is concomitant in most instances.

For this reason one must observe: (1) the extent of

the tumor in the wall and in the interior of the V. jug. and likewise the accessory veins entering it (cancerous thrombosis); (2) one must consider the possibility of recurrences in the venous wall because of involvement of the vasa vasorum even after elimination of metastatically ramified lymph node metastases; (3) one must consider the secondary infection as a factor which greatly furthers the spread of cancer.

According to the method used by Zange for a long time on basis of clinical experience, the resection of the vein should for these reasons be performed as early as possible, i.e. always when the metastasis no longer lies free in the surrounding fat but has already come into intimate contact with the vessel. It should also be performed prophylactically if one is dealing with an assumedly great tendency of the primary tumor toward glandular metastases and glandular recurrences, so that one may operate later unimpeded by the vein especially if using electrosurgery.

If the tumor has attached itself to the large cervical artery, it penetrates into the latter usually neither by continuous growth nor by way of the wall vessels, but only when the vessel wall has been eroded by infection and nutritional disturbance, i.e. when a spurious aneurysm has been formed.

Excellent results have been obtained with the resection of the carotid artery, as in 3 of 5 cases the ligation of the interna, among these twice in 64 year old patients, was tolerated without lasting disturbances, and there occurred unilateral paralysis as an injury in one younger patient; even in this instance it was only a temporary injury.

In two additional cases of resection of the common carotid artery ligation of the artery lasting for days was applied. In both cases the ligation caused symptoms of central deficiency with foci of softening and at the same time serious infection of the arterial wall. Cause of death in one case was due to erosion following hemorrhage; in the other case multiple cerebral abscesses as a late manifestation of infected emboli was the cause.

The failure of ligation as a result of vascular erosion and hemorrhage is to be traced back to the infection of the fundus of the wound. In connection with this there follows a discussion of the method of ligation and resection of the carotid, especially also after previous compression. If the wound is infected as is generally the case when the

lymph nodes participate in the generally secondarily infected malignant tumors of the region of the neck and of the head, the artificial compression of the A. carotis, preceding vascular ligation and resection, should be avoided as being too dangerous, causing more damage than good.

Zange, J.: "Tonsils and the Heart"
Arch. f. Ohren, Nasen u. Kehlkopfheilkunde,
154: 198, 1944.

This is a well written article dealing with the difficulty in diagnosing chronic tonsillitis and discussing its relationship to the production of septic diseases of various points of the heart. The author points out the difficulty of making a diagnosis in the case of apparently harmless looking tonsils of small size and which are almost hidden in the tonsillar fossa. Disease of the tonsil is often proved to be present only on histopathological study after removal.

The second portion of this article attempts to prove the direct etiological connection between foci of infection in tonsils and teeth and septic heart and kidney disease. The article is well illustrated with microphotographs and electrocardiograph tracings.

Moser, F.: "Local Symptoms in Otogenous and Rhinogenous Meningitis and Their Diagnostic Value".
Arch. f. Ohren, Nasen u. Kehlkopfheilkunde,
154: 421-453, 1944.

Otogenous and rhinogenous meningitis spreads rapidly over the base of the brain in the vicinity of the subarachnoid space and quickly presents the clinical picture of a generalized meningitis with signs of localized brain irritation from purulent involvement of the cisterna lateralis, pons and pars interpeduncularis, the Sylvian sulcus, the Roland sulcus and the occipital cisterna.

In recent years under the influence of sulfa therapy localized leptomeningitis has increased, probably due to a well developed fibroplastic encapsulation of the infection at certain points. Thrombosis of the sagittal sinus also accounts for some of these focal areas. Continuation of the sulfa therapy in these cases is without result but Zöllner has cleared up them by subdural puncture of the basal cisterna. This is an excellent article.

Wulstein, H.: "Metastasis of Malignant Blastomas of the

Throat, Nose and Ear."

Arch. f. Ohren, Nasen u. Kehlkopfheilkunde, 149:
517, 1941.

A compilation of all malignant blastomas of throat, nose and ear shows that in spite of some very favorable groups (carcinomas of the vocal labia, canceroids of external ear and of the nose) one may nevertheless figure clinically with metastases in one half of all the cases.

In by far the majority of cases one is dealing with metastasise in the various regional or more removed groups of lymph nodes. For the most part, the old rules on lymphogenic tendency of the blastomas to form metastases in the various organs was confirmed, but new and atypical results were obtained, for example in 45 tumors of the accessory sinuses. 13 (29%) of them showed regional metastases.

Individual groups of lymph nodes, as for example the retropharyngeal, and also the pre- and paratracheal lymph nodes, apparently do not receive sufficient attention, as was shown in individual examples.

Also the hyperplastic-inflammatory swelling of the lymph nodes, on one hand as a manifestation of secondary infection, on the other hand as a defensive reaction in the control of carried-in tumor cells, was discussed.

In more than 10% of the cases it was possible to demonstrate that metastases occurred through the blood stream.

The first dissemination in this manner occurs in the tumors of the field in question almost exclusively in the lungs; in cancer of the lower esophagus it enters the liver by way of the portal vein; in bronchial carcinomas, as in tumors of the lungs, it may enter immediately into the greater circulatory system.

The metastases in the lungs, which are pathologico-anatomically not at all infrequent (said to be more than 50%), but in most cases microscopically small, manifest themselves clinically only if they themselves or their regional lymph node metastases have attained, for example, a size that can be demonstrated roentgenologically or if the dissemination occasionally causes such pronounced functional disturbances that respiratory and circulatory disturbances result; finally one must always assume their presence if secondarily they again have caused metastases in the greater circulatory system.

Among the various tumors, those of the tonsils, of the roof of the mouth, and of the base of the tongue display a strikingly high participation in hematogenous metastases, and also to an almost greater extent those of the accessory sinuses and of the middle ear. This tendency of the latter is traced back to a penetration into the adjacent venous spaces--frontal sinus and the cavernous spaces of the ethmoid bone.

Inoculation metastases occur in this field, but they only play a subordinate role, and it is also easy to confuse them with hemotogenous metastases.

No proof could be furnished in a renewed investigation as to whether the new methods of treatment, especially electrosurgery, exerts a favoring influence upon hematogenic metastasis.

Furthermore, suggestions were made as to simplified, uniform recording of metastases for the purpose of a clearer and more exact supervision of the patients, as all permanent successes depend also on the avoidance of metastases and their recurrences.

An excellent chart showing regional glandular metastases in this area is presented in this article.

Zöllner, F.: "Actinomycosis Ascending to the Floor of the Skull".
Arch. f. Ohren, Nasen u. Kehlkopfheilkunde,
153: 271, 1943.

During the last few years the author had opportunity of observing three cases of actinomycosis of the floor of the skull. The first patient, in whom the infection presumably had its point of origin in the teeth and who was observed during the course of several months, but who refused to submit to any major operative treatment, died. The second patient, in whom the disease had a very similar course, was treated by means of roentgen rays and radiosurgically; in this instance treatment was administered through the maxillary foramen cavity with laying open the retromaxillary soft parts; at the end of one year, the patient seems to be cured. A third case, infected by way of the pharyngeal tonsil, was admitted with advanced endocranial complications; this case was autopsied. The entire floor of the skull was examined in large sections which were prepared at various levels. These observations, together with the relatively few cases known at the most in surgical

literature, and where the patients died generally of cerebral complications, show that there are 2 typical courses of this infection, depending on its point of entry. If the infection enters through the oral pharynx, the retro-maxillary space is most endangered; if the nasal pharynx is the point of entry, the upper paravertebral tissue is the most endangered region. Since roentgen radiation does not suffice in these regions, surgery following the use of radium must be employed at an early point. Symptomatology and diagnosis are elucidated in detail.

Moser, F.: "Evaluation of the Diagnostic and Therapeutic Frontal Sinus Puncture According to K. Beck"
Monatschrift. f. Ohrenheilkund und Laryngo-Rhinol., 1944, 78: 113-36.

1. Diagnostic and therapeutic frontal sinus puncture according to K. Beck has proved valuable either as a supplement to, or as a replacement of, older methods. A short review of the special anatomical and physiological conditions of the nasofrontal duct explains this.

2. The diagnostic advantage of this procedure (first recommended in this regard by Kummel) lies in the fact that it is capable of replacing the old exploratory opening of the frontal sinus almost without exception and by simultaneous examination of the function of the nasofrontal duct in bringing full clarity into cases which otherwise would remain unclear.

This holds true primarily in cases of so-called "Ex vacuo frontal headaches" without roentgen findings or with roentgen findings which are difficult to explain. Such cases proved to be much more frequent than was suspected.

3. The therapeutic advantage of the method and its extent was shown in numerous practical examples; its indication was extended to certain cases of chronic purulent sinusitis and certain complications such as incipient rupture into the orbit or outward in acute processes.

Therapeutic puncture of the frontal sinus is indicated in the following cases:

- a) in simple, purely vasomotor and vasomotor-catarrhal closures of the duct with or without participation of the mucosa of the frontal sinus, and likewise in mild cases of polyposis.
- b) in acute and subacute purulent frontal sinusitis

since in the latter the changes of the mucosa may still be reversed.

- c) in chronic infection of the frontal sinus, without advanced degree of polyposis because even here the affected mucosa may be regenerated after the duct has been made permanently passable.

According to the author's experience, it is just as easy to cure purulent infection of the large frontal sinuses by means of Beck's puncture as in smaller sinuses.

- d) in slight complications, as in incipient penetration of an acute purulent process into the orbit or toward the outside.

Absolute contra-indications on the other hand exist in orbital phlegmones, progressive osteomyelitis, and all intracranial complications, such as meningitis, cerebral abscesses, and sinus thrombosis, or even when the suspicion that such conditions exists.

If an orbital abscess or a subperiosteal abscess above the frontal bone is already present, simultaneous incision from the outside is necessary. In the latter case the incision with exposure of the frontal bone must be undertaken before the puncture, and the latter must then be performed immediately through the bone. Puncture determines immediately if the condition is only a harmless, ordinary, circumscribed progressive osteomyelitis, and this is confirmed by a rapid drop of the fever with rapid improvement of the general condition after successful puncture and opening of the duct. But if such an improvement does not occur in the course of a few days, the probability is that one is dealing with progressive osteomyelitis which must then be treated immediately radically. If this is kept in mind there are also no contra-indications against puncture therapy in these cases. Repeated excellent successes with Beck's punctures alone (if necessary with simultaneous external incision) in such cases also permit the recommendation of this conservative operation, and do not justify the exclusion ex principio of this method, as has been demanded by others.

The special advantage of the therapeutic frontal sinus puncture according to Beck in the affections mentioned above lies in the fact that it succeeds in the most conservative manner in making the duct passable by means of simple ventilation and the introduction of suprarenin, and likewise, by the introduction of astringents into the frontal sinus, to regenerate the diseased mucosa even in

such cases where both (healing of the duct and elimination of the affection of the mucosa) were no longer possible by the customary conservative endonasal way and thus destructive operations from within and without had to be used.

4. The operation is dangerous only in the hands of the non-expert who does not sufficiently keep in mind the necessary precautions or does not use them correctly. A case of this sort was reported in the above; in this it was possible to cure the resulting meningitis.

5. A table showed a survey of the author's diagnostic and therapeutic successes with Beck's method in various affections in the course of the last six years.

Zöllner, F.: "Osteoporosis and spontaneous fractures due to elective injury of the osteoblasts following roentgen radiations."
Strahlentherapie, 1941, 70: 537-540.

On the basis of the author's histological examinations of the laryngeal bone it is to be assumed that osteoporoses occurring subsequent to radiation therapy in various parts of the skeleton are not only caused by general nutritional disturbances, but that simultaneously also the osteoblasts are injured and thus the normal equilibrium between resorption and bone development is disturbed. With a slight overdosage the osteoblasts will probably not disappear completely, but they are only injured in their vitality, perhaps even then only temporarily. This is evident in the attached roentgenogram by Holthusen, in which atrophy caused the spontaneous fracture of the neck of the femur. Healing assumes a resumption of the activity of the osteoblasts. Only in higher dosage is there a total and permanent destruction of the osteoblasts.

Zöllner, F.: "Reactive-perichondritis of the Larynx and its Relation to Roentgen Radiation"
Arch. f. O.N. u. Kehlkopfheilkunde, 149: 456, 1941.

Reactive perichondritis which may appear during or shortly after roentgen radiation of carcinoma of the larynx is not the result of injury by the rays; also it is not due to special hypersensitivity of the healthy or malignantly degenerated tissues, but it is to be traced back to an infection of the tumor and of its base, especially of the ossified cartilagenous skeleton. In tumors of the larynx

this infection passes through an unusual course.

By the high dosage of rays, carcinoma radiation causes the focus of inflammation to become active, which is evidenced by an early edema. In favorable cases it may become again inactive, but in graver cases it develops immediately into perichondritis (early stage). With the appearance of necrotic processes and after removal of part of the tissues there may also occur an apparent healing, but usually these cases end in a retarded case of perichondritis (late form).

The more advanced cases must be watched carefully and often treated surgically.

4. The Department of Gynecology and Obstetrics.

This section was located in a large 4 story building that had not been damaged at all. The staff consisted of the Director, Prof. Dr. G. von Mikulicz-Radecki, his Oberarzt, Dr. Gustav Mistwerdt, and four internes. The department has 150 beds for gynecology and 125 beds for obstetrics.

Prof. von Mikulicz, aged 55, was a pupil of Stöckel at Hamburg for many years before coming to Jena in 1932 - he is almost as well known in Germany as his teacher, Stöckel, was. His department reflects the character of its director and wards and operating room seemed to hum with activity. This was the only clinic in Germany that I visited where there was no bemoaning the sad fate of Germany and fear for the future of German scientists.

Prof. von Mikulicz has been mainly interested in the treatment of Ca of the uterus and its adnexa. He has developed a new operative technique for radical extirpation of the uterus which had a primary mortality of only 4 to 6% in contrast to the Wertheim technique which had a primary mortality of 10%. Using a combination of surgery preceded by prophylactic x-ray and radium radiation the percentage of cures after five years was 30. The roentgen rays are applied to 5 areas, 2 over the abdomen, two over the back and one to the vagina. One radium tube containing 60 milligrams was inserted into the tumor itself and another of 30 milligrams was used in the uterus. They were allowed to remain in situ for 24 hours. The radium was used between the 1st and 2nd and the 2nd and 3rd application of the roentgen rays. Periods between treatments depends upon the amount of local and general reaction. For extensive superficial Ca and Ca of the ovary the Coutard method of roentgen radiation gave the best results.

Inoperable Ca of the uterus is treated with heavier radiation for a longer period but without favorable results except for prolonging life for a period of 6 to 8 months.

Extensive studies of the electric currents generated by the musculature of the uterus with a view to being able to determine its vitality and viability under certain diseased conditions have been carried out over a long period of years. General x-ray therapy in the field of gynecology has also been one of the main interests of this clinic. Considerable work has been done on the fertilization, attachment and development of the human ova.

From a very extensive list of publications written by Prof. von Mikulicz-Radecki a few of the most recent are listed here:

A. Books.

1. "Geburtshilfe des praktischen Arztes". Verlag: Johann Ambrosium Barth, Leipzig, 1943, 2 u 3. Auflage.
2. "Die Strahlentherapie in der Gynaekologie", in Stoeckel, "Lehrbuch der Gynaekologie" 10. Aufl. Verlag: S. Hirzel, Leipzig 1943.
3. "Befruchtung, Einbettung und Entwicklung des Eies" in: "Lehrbuch der Geburtshilfe" von W. Stoeckel, 7. Aufl. Verlag! Fischer, Jena 1943.

B. Scientific Articles.

1. "Erfahrungen an Geburten von Hausschwangeren". Zentr. f. Gyn. 1939
2. "Ein neuer Blasendauerkatheter" Zentr. f. Gyn., 1939
3. "Endometriosen ausserhalb der Geschlechtsorgane". Munchener med. Wochenschrift, 1939.
4. "Ergebnisse der Reihenuntersuchungen zur Erfassung unbekannter Genitalkrebse der Frau in Ostpreussen." Munch. med. Woch. 1939.
5. "Aufzucht und Prognose der Frühgeburten." Zentr. f. Gyn. 1941.
6. "Uterus septus bzw. subseptus als Abortursache, seine Diagnose and Behandlung." Zentr. f. Gyn. 1941
7. "Eine neue Sammelstatistik der absoluten Heilung des Collumcarcinome nebst Vorschlag uber die Norm einer allgemein-vergleichbaren Carcinomstatistik." Zentr. f. Gyn. 1941.
8. "Radiumbehandlung des Kollumkarzinoms während der Schwangerschaft mit dem Ziel eines ausgetragenen, gesunden Kindes." Strahlentherapie, Bd. 69. 1941
9. "Die Bedeutung der Vorsichtsuntersuchungen zur Förderung der Krebsfrüherfassung." Archiv f. Gynaekologie Bd. 173, Verhandlungen der Deutschen Gesellschaft f. Gynaekologie (Referat) 1942.
10. "Ist wegen Hyperemesis gravidarum eine Schwangerschaftsunterbrechung notwendig ?" Munch. med. Wochenschrift 1943.
11. "Erfolge und Erfahrungen bei der Sterilitätsbehandlung" Zentr. f. Gyn. 1943.
12. "Komplizierte Appendizitis und dadurch bedingte Sterilität bei der Frau." Zentr. f. Gyn. 1943.
13. "Ueber konstitutionellen Genitalinfantilismus" Geburtshilfe und Frauenheilkund. 1944.

14. "Ursachen und Behandlung der Amenorrhoe."
Die Aerztin, 1944.

There follows a summarization of the only reprints that could be obtained:

Mestwerdt, G.: "Histological evaluation of the colposcopic picture." Arch. f. Gynaekologie 166: 490, 1938.

By careful routine observation of the mucous membrane of the cervix and vaginal walls with the colposcope certain changes can often be observed that would have been missed in macroscopic examination. Biopsy of the altered areas can be made and studied in serial sections for early malignant changes. In the course of 900 routine gynecological examinations with the colposcope 17 (1.8%) showed definite leukoplacia; thickening and folding of the M.M. was seen in 32 (3.5%) cases. 6% (60 cases) showed a typical proliferation not visible to the naked eye. The cervix was removed and 600 to 1300 sections in series were studied. Well established Ca were found in 2 of the 14 cases examined histologically. The author feels that these two cases demonstrate sufficiently the value of routine colposcopic examination.

Mestwerdt, G.: "Present-day View of the Nature and the Treatment of the Placenta praevia."
Med. Klinik, 1: 1, 1944.

Even today placenta praevia represents a very grave disturbance in child birth. Since limitation of its dangers is most successfully possible in obstetrical hospitals, transfer of the patient to such a hospital is essential.

Although here, as elsewhere in German medicine, there predominates the obvious desire of attaining the best with the most limited amount of surgery, in case of placenta praevia, major surgery, especially cesarian section cannot always be avoided. With correct indication and selection these operations will aid in avoiding the grave losses in maternity and also to save at least a part of the children.

Mestwerdt, G.: "Determination of action currents in the human uterus." Zschr. f. Geburtshilfe u. Gynaekologie, 127: 44, 1944.

By means of a modern universal intensifier electrocardiograph (model by Siemens-Reiniger-Werke* tests were undertaken for the determination of action currents in the musculature of the human uterus. The first reading from the uterus in labor during the parturient period from the surface of the body yielded no usable results.

In tracings from the puerperal uterus immediately in situ during the period after birth post partum or post abortum by means of needle electrodes, action currents were recorded graphically which changed in their course with the choice of various sites of origin in the organ.

For the first time, fluctuations in the electric potential were observed in the extirpated human non-gravid and puerperal uterus, which occurred spontaneously. Changes in amplitude and frequency were likewise recorded in registered curves by means of changing the point of connection of the electrodes.

The graph of the action current revealed the effect of substances which alter uterine motility, such as hypophysin, gynergen, neogynergen, atropine, etc.

Urbach, H.: "Experimental studies on identification and conservation of mother's milk in collecting stations."
Zschr. f. Immunitaetsforschung, 103: 345, 1943.

1. The article discusses methods for the identification of mother's milk samples in collecting stations.

2. An easily prepared, precipitating animal-like antiserum furnishes in the precipitation reaction on the slide unequivocal, easily evaluated results; it thus enables one to test mother's milk as to its purity.

3. The preparation and investigation on the method of action of the anti-serum are described.

4. The possibility of conservation of mother's milk by means of heat sterilization has been determined with various means of storage by the examination of its stability as indicated by the bacterial content of the preserved milk.

5. To obtain low bacterial counts and an absence of *B. coli*, temperatures of above 74° had to be employed.

6. Tests of artificial infection of mother's milk with tubercle bacilli and typhoid and coli bacteria showed that temperatures of 90° and 100° sufficed to destroy the pathogenic microorganisms in the milk.

7. As expected, milk frozen for 14 days at -5° C. showed neither a decrease of the bacterial content nor a disappearance of staphylococci or typhoid and coli bacteria introduced into the milk.

8. The influence of heat sterilization upon antibody and vitamin content are discussed. It was concluded that a very large part of the antibodies were destroyed by heat sterilization but this was found to be of little importance as it is well known that the newborn child does not utilize milk-transmitted antibodies for its protection against infection. Vitamin A found in the fat of mother's milk as well as Vitamin B are heat resistant and their content is not changed to any appreciable extent. Vitamin C and D are about 30% destroyed but they can be easily restored by subjecting the milk to ultra-violet radiation.

In conclusion it can be said that although sterilization of mother's milk causes some damage to it, it still remains superior to any artificial milk.

5. The Department of Physiology occupied a large four story building until it was 100% destroyed by bombing in December 1943. All records and apparatus were destroyed by fire. The department has not functioned since, but the Director, Prof. Emil von Skramlik has continued to prepare articles for publication at his home since then. Prof. Skramlik has been working for the past twenty years on the physiology of the circulation and on the physiology of the senses (taste, smell and touch) of the lower animals. This work was completed in Naples, Italy, in 1944, and was recorded in 22 colored moving picture films made by the Reichsanstalt für Film und Bild in Wissenschaft und Unterricht in Berlin. Skramlik stated that they were made specially for teaching medical students and were to have been made part of the curriculum in every medical school in Germany. Scientific knowledge obtained from these experiments on lower animals has been applied to man and published as separate reports.

There follows a summarization of certain articles:

von Skramlik, E.: "A Laboratory Manual of Practical Physiology Used at the Friedrich-Schiller-University of Jena" Gustav Fischer, Jena, 3rd Edition, 1944 (112 pages)

This manual gives a good idea of the content of the laboratory instruction and exercises done by first year medical schools. It corresponds almost exactly to comparable manuals used in Class A schools in the U.S.

von Skramlik, E.: "Tobacco Smoke and the Organism."
Jenaische Ztschr. f. Med. u. Naturwiss,
78: 23, 1945.

The first requisite for tobacco poisoning of the organism is the entrance of the poison into the circulatory system. This depends upon the system itself, permeability of the membranes, quantity of the inhaled material (dosage). The greater the dosage the greater the effects of the nicotine poisoning. This quality is restricted as only a little nicotine is liberated on burning tobacco. Permeability of the membrane depends on its thickness. Thus there is less oral than alveolar absorption. The pH of the membrane surface is another factor in nicotine absorption. The higher the pH the more easily is nicotine absorbed. Another factor is the tobacco itself. Thus some tobaccos yield more nicotine than others. This work describes the effect of nicotine on lower animals as well as on man.

von Skramlik, E.: "The Cheyne-Stokes Phenomenon."
Jenaische Ztschr. f. Med.-u. Naturwiss,
77: 231, 1941

The cause for the periodic activity of an organ may be found either in a nerve center, in the conductors from this center, or in the peripheral and organs. Of especial interest are those phenomena which can be detected in the centre. The majority of Cheyne-Stokes phenomena are based upon a temporary loss of automaticity by which means the activity of the peripheral organ is depressed. This may result in a change of the entire bodily metabolism, and thus another nerve center may come into play and overrule the depressive impulses from the first centre. The control in the Cheyne-Stokes⁰ phenomenon is thus a component of many complex factors. Automatic systems may be classified into two types, 1) those in which stimuli may rapidly follow one another, and 2) those in which rapidly successive stimuli result in periodicity (respiratory system). The Cheyne-Stokes phenomenon is therefore not a pathologic process, but is a normal reaction of an organ of the second above mentioned type.

von Skramlik, E.: "New Results in the Comparative Study of the Circulation." Jenaische Ztschr. f.
Med. u. Naturwiss, 77: 1944:116

This is a developmental study of the circulatory systems, from the primitive systems of the hydra, worm, amphioxus, etc., to the more complicated systems. It is a general description of the function, history, development and embryology of the circulatory systems in the primitive to the more highly developed animals.

von Skramlik, E.: "Research on the Heredity of the Sense of Taste." Jenaische Ztschr. f. Med. u.
Naturwiss, 76: 50, 1943.

When taste is tested with thiourea, a certain percentage of subjects will consider it tasteless, a certain percentage will call it of bitter taste, and a third group will vary in its description of the taste. It has been found that the non-tasting trait to thiourea is a recessive trait in the individuals.

Also studied had been the quantity and distribution of the circumvallate papillae. There had been found a racial difference in their distribution and also familial differences. Anatomical distribution of the papillae in identical twins were said to correspond.

6. The Department of Bacteriology and Hygiene was housed in a 40 x 110 ft three story brick building which was undamaged. The director was Prof. Dr. Hans Schlossberger, aged 58, who spoke English fairly well. He stated he had already been interviewed by 3 CIOB teams. Very little work except for routine examinations had been done during the last two years due to lack of research workers, laboratory assistants and material. For the past year this department has been occupied mainly with the study of the inhibitory action of the extracts of cultures of the different strains of penicillin. At present, most of the strains have died due to lack of media ingredients (chopped egg yolk) and work is at a standstill. Penicillin was grown in sufficient quantities for animal experimentation only. Schlossberger stated that to the best of his knowledge no penicillin had been used for treatment of disease anywhere in Germany.

He also studied the action of chaulmoogra oil on the lepra bacillus, the skin reaction in typhus fever, the influence of toxins of different strains of the gas bacillus upon coagulation of the blood and the cultivation of bacteria on culture media with a sugar content as high as 40%. Nothing has been published on these subjects. Other work done is indicated by the following summarization of the following papers:

Kummerling, W.: "Tryptophanase of B. Coli and Other Bacteria."
Zschr. f. Immunitätsforschung, 103:425, 1943.

1. Suspensions of Coli and Proteus X-19 bacilli, killed according to the method of Happold and Hoyle by means of chloroform, as well as suspensions of vibrios are capable of changing tryptophan into indol. By this conservative killing of the bacteria the system of enzymes, designated as "tryptophanase", which evidently represents a constituent of the substance of the bacterial body, is apparently not at all or at least not essentially reduced in its efficacy.

2. The tryptophanase of a part of the coli strains examined was inactivated by means of the coli serum of the I.G. Farbenindustrie A.G., Abteilung Behring-Werke.

3. In an analogous manner the tryptophanase of *Bacillus Proteus* X-19 was impeded in its effect by means of serums from typhus patients who had displayed positive results in the Weil-Felix reaction.

4. On the other hand such an inactivation of Coli-tryptophanase by means of typhus serum, resp. *Proteus* X-19 tryptophanase by means of Coli serum could not be found. The inactivation of tryptophanase must thus be traced to a specific antigen-antibody effect.

5. The formation of tryptophanase of Coli and *Proteus* X-19 bacilli is impeded by sulfonamides in dilutions which no longer interfere with the growth of the bacilli in question.

Triffterer, T.: "Connection between the Weil-Felix Reaction and the Precipitation of the O-antigen of *Proteus* X-19."
Zschr. f. Immunitätsforschung, 104: 41, 1943.

1. Serums of typhus patients and convalescents yielded with a solution of the glucolipoid constituent, to be regarded as O-antigen of *Proteus* X-19 (Boivin and Mesrobianu) a specific precipitation.

2. The result of the precipitation test parallels to a far-reaching degree the result of the Weil-Felix reaction.

3. Serums which displayed in the Weil-Felix reaction a titer of 1:50 to 1:200 yielded with the strongest concentration of the O-antigen (1:2500) in general a negative result.

4. The sera of 5 persons who about 3 months ago were affected with Volhynian fever gave negative reactions in the agglutination and in the precipitation test.

5. The toxicity of the O-antigen for mice, to be considered as the endotoxin of the *Proteus* bacillus X-19, is neutralized in a specific manner by the serum from typhus patients with high agglutination and precipitation titer.

Wengeler, F.: "Epidemiologic and Pathogenetic Significance of Diphtheria Bacteria." Zentralblatt f. Bakteriologie, Parasitenkunde und Infektionskrankheiten, 151: 60, 1943.

The three types of Diphtheria bacteria, gravis, mitis, and intermedius can be differentiated from an epidemiologic and a pathogenetic point of view. The author's own observations allowed him to recognize a special epidemiologic position of the individual types in the total epidemic aspect. From the pathogenetic point of view primarily the percentual local distribution of the three types was of significance; in other respects only the characteristic pathogenetic signs of the gravis type were distinctly demonstrable.

Link, Th. : "Chemoresistance of Staphylococci to Sulfonamides." Zschr. f. Immunitaetsforschung, 104: 441, 1943.

Staphylococcus strains, which in vitro were rendered resistant to sulfonamides, change growth-impeding sulfonamides into substances which exert the opposite effect.

7. The Department of Pharmacology was situated in a small 3-story building located on the edge of Jena and it had not been touched by the war. Its director was Prof. J. Labes, aged 60, who spoke no English. He stated he had been interviewed by 3 different teams. He further stated that no research contributing to the war effort had been done in his laboratories.

His work for many years had been on metabolism of the lower animals and its relation to human metabolism. He also studied osmosis, colloidal membranes and the membrane permeability of the blood corpuscles. He explained that his work had always been of a theoretical type which laid the ground for others to work out in a practical way.

A summarization of a few papers follows:

Bergstermann, H. & Stein, W.: "The Action of Quinon and Other Poisons Combining with Thiol Radicals on Succinic Acid Dehydrose." Biochemische Zeitschrift 317: 217, 1944.

Quinone is a strong succinodehydrase poison, even in a concentration of 1/10,000 mol. The results obtained in these experiments are contrary to those of Mazza and Laurenza, according to whose results succinodehydrase is

easily reduced. Since quinone is an effective poison for thiol groups, the results of Mazza and Laurenza were incompatible with the assumption of Hopkins that intact thiol groups are necessary for the activity of the ferment.

The poisonous action of quinone is stronger in the absence of succinnic acid, which protects succinnic acid dehydrogenase from poisoning by quinone. A stronger protective action of the substrate was found in poisoning experiments with Tellurite, Selenite and Arsenite.

Bergstermann, H.: "The Action of Oxyphenols and Aromatic Amines and Their Oxydation Products on Ventral Cord Preparations of Leeches." *Biochemische Zeitschrift*, 317:228, 1944.

Labes has investigated the action of hydroquinone on the nervous centres of leeches in alkaline and acid media. He found the action much greater in alkaline medium. He concluded therefrom that the oxidation products of hydroquinone to quinone in alkaline medium are much more efficacious.

This study shows that the alkaline reaction for the action of hydroquinone is only indirectly of importance if one prevents oxydation by exclusion of oxygen or by means of reducing substances such as sodium sulfite, similar results are obtained in alkaline medium. Thus for strong action and resulting poisoning on the nervous centers, the oxydation product of hydroquinone is the important substance. This substance has been proved similar to quinone. Other quinone forming substances have a weaker action because their respective quinone products are more instable substances which do not produce quinone have equal reaction in alkaline and acid media.

Bergstermann, H. and Elbracht, O.: "The Influence on Surface Tension of Phenol and Nitrogen Derivatives by Means of Additions-Compound Formation." *Biochemische Zeitschrift*, 310: 64, 1941.

Labes has demonstrated precipitation following mixture of phenol derivatives and nitrogen bases in aqueous solution. Hydrophobe substitution enhances the reaction while addition of hydrophile substitute diminishes it. The solubility product of the reaction partner is very small due to poor solubility of the reaction product, especially in alkaloid reactions. On the other hand, the products of the reaction are well soluble in lipoidal solution. Combination is enhanced in lipid solution.

This study has shown the reaction product to be concentrated on the surface of the water, corresponding to its strongly hydrophobic properties, resulting in a marked decrease in surface tension of aqueous solutions. This decrease greatly exceeds that of the sum of the tension-depressing effects of the reaction partners taken separately, and is observed in concentrations much less than those leading to precipitation. Therefore, one notices a strong depression of the surface tension, before one can recognize chemical combination thru precipitation. The introduction of hydrophobe substances increases the surface tension reaction, while hydrophile substances diminish the reaction.

Labes, K. and Bergstermann, H.: "Precipitation Reactions of Quinoline (Chinolin) and Quinoline Acid Imid (Chinolinsäureimid) with Phenol Substitution Products."
Archiv f. Experimentelle Pathologie und Pharmakologie, 192: 103, 1939.

The addition compounds of quinoline and quinoline acid amid with various phenol derivatives were studied. Quinoline is superior to pyridine derivatives in precipitation reaction with substituted phenols. It is also superior to collidine. The degree of efficacy of the phenol substitutions on the precipitation reaction with quinoline is almost the same as in the reaction with pyridine, methylpyridine, and pyridine carbon acid ethyl esters. A specific increase in efficacy is observed with dioxypheols and salicyl acid amides. The rest-valence rich hydroxyl and carbamide groups seem to function specifically in these quinoline reactions. Quinoline acid amide does not react with any of the examined phenol derivatives. The reaction is thus almost entirely inhibited by the dicarbon-acidamid substitution on the pyridine ring. However, quinoline-acid-amid react with para- and meta-aminophenol resulting in a soluble characteristically yellow molecular compound developing into insoluble colorless crystals.

Labes, R. & Ther, L.: "Reactions of Addition of Aromatic Amines and Phenol Derivatives."
Biochemische Zeitschrift, vol.305 heft 4,1940.

Formation of addition compounds of aromatic amines and phenols can be quantitatively observed by means of precipitation reactions. By this means a number of chemical laws have been found: The amino nitrogen reacts differently to phenol depending on conditions of combination and alkalinity. Furthermore, by means of determination of dissociation constants of the various amines, the influence of various substituents on the alkalinity and their

importance for biological effectivity could be calculated.

Bergstermann, H.: "Examination of the Reaction Amplifying Action of Lipoid Solvents on the Formation of Addition-Combinations of Bases and Phenol Derivatives."
Biochemische Zeitschrift, 304th Band, 4th Heft, 1940.

Labes has shown that the tendency for addition of phenolic and basic groups lead to minute solvency products. The formation of products in addition of such substances is probably of biologic importance in vivo.

This study demonstrates that in lipoid phases, the formation of organic addition combinations of this type is much greater than in an aqueous milieu. This results in apparent alteration of the break-down coefficients lipoid/water of the reaction partners, as the products of the reaction increase in lipoid phase.

By means of determining the equilibria between water and benzol, the complex-constants were calculated of the combinations of antipyrine-metanitrophenol and antipyrine-paranitrophenol in benzol. They amount to 650 for antipyrine metanitro-phenol and 170 for antipyrine paranitrophenol. The complex constants of the two substances vary with the solvent. For the substances mentioned above, constants in water could not be determined because they proved to be so small.

It should be noted that this change of the breakdown conditions may be of importance for pharmaceuticals. Furthermore, substances may be concentrated in a certain organ by this medianism. Also, these results may be of importance for problems of permeability, etc.

III. CONCLUSIONS.

This investigator feels that this report contains no information concerning research studies that contributed to the war effort. It may be of some value in that it indicates the trend of thought pursued by the conservative members of a medical faculty which seemed to successfully combat in a more or less silent way the inroads made by Nazism into scientific research. It might also be said to demonstrate the defeatist attitude that was produced among older scientists who had felt for 18 months previous to capitulation that Germany was going to be defeated.

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